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09/303,053	04/30/1999	GEORGE I. DAVIDA	G0635/7004	7831

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EXAMINER

BALI, VIKKRAM

ART UNIT PAPER NUMBER

2623

DATE MAILED: 11/29/2001

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/303,053

Applicant(s)

DAVIDA ET AL.

Examiner

Vikkram Bali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Objections

2. Claims 1, 5 and 6 are objected to because of the following informalities:

In claims 1 and 5 the applicant refers to "the template" in line 5 of claim 1 and line 1 of claim 5, however, the preamble states "an identification and verification template (IVT)". It is understood by the examiner that "the template" and "IVT" is the same, however, applicant is advised to correct the claims 1 and 5 to read "IVT" rather than "the template".

In claim 6, the applicant mentions an abbreviation "IVT", however, applicant is advised to include the entire phrase for the abbreviation as the abbreviation appears first time in this independent claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "the biometric registration template" and "the registration template" in line 1 of claim 12 and in line 2 of claim 12 respectively. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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6. Claims 1-14 are rejected under 35 U.S.C. 102(a) as being anticipated by IEEE Security and Privacy proceedings, April 1998, On Enabling Secure Applications Through Off-line Biometric Identification, by Davida et al. (hereinafter Davida).

With respect to claims 1-14, Davida in On Enabling Secure Applications Through Off-line Biometric Identification discloses the invention to its entirety. The applicant's specification is substantially similar to the paper as proposed and published.

With respect to claims 1-5 and 14, Davida discloses a User Initialization process that includes obtaining the biometrics calculating the dependency vector using the error correction code and majority decoding for the multiple biometrics, see section 5.1, page 154, subsection User Initialization to its entirety.

With respect to claims 6-13, Davida discloses a User authentication process uses the cryptographic validation mechanism that includes obtaining the biometrics calculating the dependency vector using the error correction code and majority decoding for the multiple biometrics, see section 5.1, page 154, subsection User authorization process to its entirety, also, in section 3.2, page 152, coding Theory it discuss the iris for the biometrics and section 5.2, page 155, paragraph 3, states the use of the password encryption with the biometrics in order to produce a key with a larger entropy.

7. Claims 1, 2, 5 and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Strait et al. (US 6038315).

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With respect to claim 1, Strait in method and system for enrollment (template) and verification of individuals by normalizing biometric variation for authenticating the users discloses: obtaining a user biometric, (see figure 1, numerical 14 for the biometric reading); and generating a dependency vector from the user biometric, (see figure 1, numerical 26, reference value, the reference value R is read as "dependency vector"); such that the template is bound cryptographically to the user, (see figure 1, numerical 38, the database is created using the R, Ne, and I, the relation of Ne, R, I is read as "the template", also, for the entire description see col. 3, lines 6-10, 14-21, 27-30, wherein, it shows that the enrollment method "generating an identification and verification template" using the users biometrics and then creates a reference "dependency vector" that includes the personal attributes such as name etc., and finally that gets cryptographically secure and stored in the data base); as claimed in claim 1.

With respect to claim 2, he further discloses: the dependency vector includes check digits of the user biometric using an error correcting code, (see col. 3, lines 14-21, wherein, the secret codeword C "check digits" is produced using the error correcting code from the biometrics), as claimed.

With respect to claim 5, he further discloses: the template contains public identification information, (see figure 1, numerical 14 and 16, biometric reader, and user name Ne, and col. 3, lines 6-10, wherein, the enrollment "the template" apparatus

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prompts the user to provide the biometric readings and the user name "public identification information") as claimed.

Claim 14 is rejected for the same reasons as set forth for the claim 1, because claim 14 is claiming substantially similar subject matter as claim 1.

8. Claims 6-8 and 13 rejected under 35 U.S.C. 102(b) as being anticipated by Piosenka et al (US 4993068).

With respect to claim 6, Piosenka in un-forgeable personal identification system discloses: acquiring an input comprising a user biometric from a reader, (see figure 2, numerical 31-34, biometric readers to acquire the biometrics of the person requiring the verification); an input comparing an IVT from a token or card, (see figure 2, numerical 35, credential reader, credential is read as "a token or card", also in col. 6, lines 41-42, it shows that the credential are written on the credit card sized card); and performing a validation protocol given as input the users biometric and the IVT, (see figure 3B, numerical 125, comparing the data on the card and the data collected using the biometric scanners), whereby a decision value is computed giving either "AUTH" or "Other", where "Other" may be anything else but "AUTH", (see figure 3B, numerical 128 and 126, wherein, if the data match the request is granted "AUTH" and if the data does not match the request is denied "Other") as claimed.

With respect to claim 7, he further discloses: the validation protocol is a cryptographic validation mechanism for an authentication scheme, (see col. Figure 2, numerical 42, decryption, figure 3B, numerical 122, and col. 8, lines 15-18, wherein, the data on the card is decrypted and then forwarded to the comparison process in order to verify the person, as seen from the figure 3B, the data once checked for the cryptographic signature is forwarded to the numerical 125 for the comparison), as claimed.

With respect to claim 8, he further discloses: the user biometric is an iris scan or a portion of an iris scan, (see col. 3, lines 46-47, the retinal pattern "iris scan or a portion of an iris scan"), as claimed.

With respect to claim 13, Piosenka discloses: acquiring a first pattern, (see col. 4, lines 55-60, wherein, the biometrics are obtained using one of numerical 11-15); combining the pattern with authenticating information, (see col. 5, lines 47-50, wherein, the physical trait "first pattern" and the privilege data "authenticating information" is combined); encrypting the combination of the pattern and the authenticating information to provide a template, (see col. 5, lines 55-60, wherein, it states that the combined data i.e. the physical trait "first pattern" and the privilege data "authenticating information", is encrypted, and written on to a credit card "template" see col. 6, lines 40-41); acquiring a second pattern, (see figure 2, and 3B, it is the authentication process the "second

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pattern" is obtained by using one of the numerical 31-34 of figure 2, also, see figure 3B, numerical 124, biometric data is collected from the user); and processing the second pattern and the template to determine if the first pattern and the second pattern are the same, (see figure 3B, numerical 125, wherein, the collected biometric data "second pattern" and the extracted data from the medium "first pattern" are compared "processing" to find if the match is there or not) as claimed in claim 13.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strait et al (US 6038315) in view of Seal et al (US 6309069 B1).

With respect to claim 3 Strait discloses the invention substantially as disclosed and as described above for claim 1. However, he fails to disclose: a canonical user biometric is generated from a function of multiple readings of the users biometric, as claimed in claim 3. Seal in personal identification using the eye teaches: a canonical user biometric is generated from a function of multiple readings of the users biometric, (see col. 6, lines 53-55, wherein, it states that multiple images should be obtained in order to overcome the problem such as user blinking the eye) as claimed.

Therefore, it would have been obvious to one ordinary skilled in the art at the time of invention to combine the two references as both the references are solving similar problem of personal identification. As taught by Seal that multiple readings of the biometrics are obtained (see col. 6, lines 53-55, wherein, it states that multiple images should be obtained in order to overcome the problem such as user blinking the eye). Strait discloses a method and apparatus for biometric authentication (see col. 3, lines 12-13, an iris is also taken as part of biometrics) i.e. identification and verification of the person, using the enrollment process that utilize the cryptographic functions. The teaching of Seal is combined to the system of Strait. This combination produces a system that will generate a identification and verification template that will use the cryptographic functions that includes the use to multiple biometric readings to come up with the best biometric reading possible to be used for the template, furthermore, this

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will overcome the problems such as the user blinking at the point when one image is captured (see col. 6, lines 53-55).

12. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Strait et al (US 6038315) in view of Seal et al (US 6309069 B1) as applied to claim 3 above, and further in view of Applicants Admitted Prior Art, (page 11, lines 4-9).

With respect to claim 4 Strait and Seal discloses the invention substantially as disclosed and as described above for claim 3. However, they fail to disclose: the function is a majority decoding function, as claimed. But, the Majority decoding is well known in the art as admitted by the applicant in specification (see page 11, lines 4-9, wherein, applicant admitted that the majority decoding is well known in the art).

Therefore, it would have been obvious to one ordinary skilled in the art at the time of invention to combine the two references as both the references are solving similar problem of personal identification. As admitted by the applicant that majority decoding is well known in the art (see page 11, lines 4-9). The Strait and Seal discloses a method and apparatus for biometric authentication i.e. identification and verification of the person, using the enrollment process that utilize the cryptographic functions, using multiple readings of the biometrics. Also, Seal in col. 6, lines 55-57, states that any well known techniques of signal processing can be used to come up with the best match of the biometrics. The well known feature of majority decoding (as admitted by the applicant) is combined to the system of Strait and Seal, as suggested by Seal (col. 6, lines 55-57). This combination produces a system that will generate a identification and

verification template that will use the cryptographic functions that includes the use of Majority decoding to multiple biometric readings to come up with the best biometric reading possible to be used for the template, furthermore, the majority decoding is the well known processing in the art.

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Piosenka et al (US 4993068) in view of Seal et al (US 6309069 B1).

With respect to claim 9, Piosenka discloses the invention substantially as disclosed and as described above for claim 6. However, he fails to disclose: the user biometric is derived from a function of multiple scans of the biometric, as claimed. Seal in personal identification using the eye teaches: a canonical user biometric is generated from a function of multiple readings of the users biometric, (see col. 6, lines 53-55, wherein, it states that multiple images should be obtained in order to overcome the problem such as user blinking the eye) as claimed.

Therefore, it would have been obvious to one ordinary skilled in the art at the time of invention to combine the two references as both the references are solving similar problem of personal identification. As taught by Seal that multiple readings of the biometrics are obtained (see col. 6, lines 53-55, wherein, it states that multiple images should be obtained in order to overcome the problem such as user blinking the eye). The Piosenka discloses an unforgeable personal identification system to identify the person, (see col. 4, lines 55-60, wherein, it states the biometrics are obtained), using the enrollment process that utilizes the cryptographic functions. The teaching of

Seal is combined to the system of Piosenka. This combination produces a system that will generate a identification and verification template that will use the cryptographic functions that includes the use to multiple biometric readings to come up with the best biometric reading possible to be used for the template, furthermore, this will overcome the problems such as the user blinking at the point when one image is captured (see col. 6, lines 53-55).

14. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Piosenka et al (US 4993068) in view of Seal et al (US 6309069 B1) as applied to claim 9 above, and further in view of Applicants Admitted Prior Art, (page 11, lines 4-9).

With respect to claim 10, Piosenka and Seal discloses the invention substantially as disclosed and as described above for claim 9. However, they fail to disclose: the function is a majority decoding function, as claimed. But, the Majority decoding is well known in the art as admitted by the applicant in specification (see page 11, lines 4-9, wherein, applicant admitted that the majority decoding is well known in the art).

Therefore, it would have been obvious to one ordinary skilled in the art at the time of invention to combine the two references as both the references are solving similar problem of personal identification. As admitted by the applicant that majority decoding is well known in the art (see page 11, lines 4-9). The Piosenka and Seal discloses a method and apparatus for biometric authentication i.e. identification and verification of the person, using the enrollment process that utilize the cryptographic functions, using multiple readings of the biometrics. Also, Seal in col. 6, lines 55-57,

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states that any well known techniques of signal processing can be used to come up with the best match of the biometrics. The well known feature of majority decoding (as admitted by the applicant) is combined to the system of Strait and Seal, as suggested by Seal (col. 6, lines 55-57). This combination produces a system that will generate a identification and verification template that will use the cryptographic functions that includes the use of Majority decoding to multiple biometric readings to come up with the best biometric reading possible to be used for the template, furthermore, the majority decoding is the well known processing in the art.

15. Claim 12 as best understood is rejected under 35 U.S.C. 103(a) as being unpatentable over Piosenka et al (US 4993068) in view of Naccache et al (US 5434917).

With respect to claim 12 as best understood, Piosenka discloses the invention substantially as disclosed and as described above for claim 6. However, he fails to disclose: the biometric registration template incorporates a password encrypted value of the registration template, as claimed. Naccache in unforgeable identification device for the identification of the person teaches: the biometric registration template incorporates a password encrypted value of the registration template, (see col. 3, lines 1-2, wherein, it states that one can improve the security by simply including the users password in the encryption) as claimed.

Therefore, it would have been obvious to one ordinary skilled in the art at the time of invention to combine the references as both the references are solving similar

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problem of personal identification. As taught by Naccache that the scheme can be improved by simply including the users password (see col. 3, lines 1-2). The Piosenka discloses a system for personal identification to identify the person, using the enrollment process that utilizes the cryptographic functions. The teaching of Naccache is combined to the system of Piosenka. This combination produces a system that will generate a identification and verification template that will use the cryptographic functions that includes the users password as the encryption in addition to the biometrics of the user, furthermore, this combination provides another possible way of securing the template and making it difficult to copy or duplicate (see col. 1, lines 28-29 of Naccache).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 703.305.4510. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703.308.6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9314 for regular communications and 703.872.9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.306.0377.

Vikkram Bali
Examiner
Art Unit 2623



vb
November 16, 2001